

REMARKS

Entry of the foregoing amendments, and reexamination and reconsideration of the subject application, pursuant to and consistent with 37 C.F.R. §§1.104, 1.112, and 1.114, and in light of the following remarks, are respectfully requested.

Amendments

Claims 9, 10, 15, and 16 have been substantively amended to recite the magnetic loss composition on the back surface of the semiconductor device.

Rejections over Inomata

The sole reference cited in the final rejection is Inomata. Independent claims 1, 9, 10, 15 and 16 now all recite that the magnetic loss material is on the back surface. Figs. 6 and 32 of Inomata, as cited in the final rejection, show what is alleged to be applicants' claimed magnetic loss material used as part of the active component of a spin dependent device and present on the front side of the device (see third full paragraph in the Summary portion of Inomata). Applicants' Fig. 13B specifically shows that the present material is on the back surface. Note the caption "DEVICE SURFACE" in Fig. 13B to denote the front of the device, as recited in claim 1. Note also Fig. 15B with respect to claim 16, which recites the magnetic loss material in a trench on the back surface of the semiconductor.

With respect to claim 29, none of the cited art shows the magnetic loss material as being "finely divided" (see Figs. 18 and 21 and accompanying disclosure at pages 33-35 of the specification).

With respect to claim 35, none of the art shows a magnetic loss layer attached in the vicinity of, having a width "substantially equivalent to or less than" that of, a microstrip line or signal transmission line similar thereto. None of the cited art shows any appreciation for the effect of the loss layer width in relation to

the microstrip/signal line losses and reflection characteristics as shown in Figs. 24 and 25 (application at page 38).

Accordingly, all of the independent claims recite a structure not present in Inomata or any of the cited art, namely the material on the back surface, the material being finely divided, or having a width less than that of an active strip/line in its vicinity.

The final rejection alleges that Inomata shows “a magnetic loss film formed on [the] back surface of the semiconductor bare chip” wherein the film is disclosed at col. 14, ln. 29-39 of the reference. Final Rejection at page two (last paragraph). To the contrary, that portion of Inomata refers to granular layer 16, which, as shown in Fig. 6 (which figure appears in the final rejection), is disposed on the front surface. The bottom layer 14a is a dielectric layer, below which is an unnumbered substrate.

With regard to the prescribed pattern recited in claims 9 and 15, Inomata shows only layers, not patterns of the material alleged to be equivalent to the claimed magnetic loss material. The final rejection fails to show where in Inomata there is any disclosure of a patterned layer, especially one on the back surface of the device.

Claim 10 now more particularly defines the entire surface over which the magnetic loss material is formed as including the back surface. Inomata, as noted above, does not show any material on the back surface and clearly does not show any material formed over “substantially the entire surface” as claimed.

Inomata does not describe the granular material as a magnetic loss layer, as alleged in the rejection. The granular layer is described by Inomata as a ferromagnetic layer that can have a soft or hard magnetic characteristic, and is provided to have a defined spin direction (col. 12, ln. 15-29). This layer, whether or not granular, or having a soft or hard magnetic characteristic, forms part of an

active component (tunnel junction) in the Inomata device (see paragraph bridging columns eight and nine) and is not a magnetic loss layer as claimed.

Regarding claim 16, Inomata does not show any trenches, or magnetic loss material therein, wherein such trench is disposed on the surface of a semiconductor substrate *to be joined*.

None of the art cited to date shows a finely divided layer as recited in claim 29.

The final rejection alleges that the addition of the saturation magnetization to the M-X-Y composition necessitated a new ground of rejection over Inomata, because Takahashi does not disclose an M-X-Y composition.

Takahashi also does not disclose a magnetic loss layer on the back of a semiconductor surface or device, or in a trench, or finely divided, or provided in a particular width relative to an microstrip/line. Rather, the reference shows *wiring* (1) that has a loss layer (2) on its side; it is separated from other wiring by an insulating film, all of which is mounted on a silicon substrate (31 in drawings 12-15 of Takahashi).

Therefore, all of the claims are allowable over these references and all of the rejections should now be withdrawn.